West Bank/Gaza
PILOT HEALTH PROJECT

Management Information System Assessment
FINAL REPORT

The Health, Development, Information and Policy Institute

Table of Contents

BACKGROUND

High fertility with short birth intervals is one of the major health problems for both women and children in the West Bank and Gaza. While immunization rates are high and infant mortality is relatively low, the effects of early marriage, immediate and frequent childbearing and high total fertility adversely impact maternal and child health, a fact well documented in both the region and the world. The Palestinian Ministry of Health has also found recently that breast and cervical cancer are on the rise among Palestinian women.

The goal of the Pilot Health Project is to improve the health status of Palestinian women and children. To do so, this activity will upgrade the quality of antenatal and postpartum services for mothers and their children in selected areas. The pilot activity's design is based on an innovative strategy with synergistic approaches for reaching the mother and her newborn as a pair (the mother/baby dyad) during the antenatal and postpartum periods, when both are most vulnerable to unfavorable health outcomes.

As a PHP partner, HDIP is to be responsible for the development of a Management Information System for the collection, storage, processing and dissemination of information for health care service providers and the MOH. The development of such a system will allow for a more efficient and accurate assessment of data regarding the health of women, infants, and of other beneficiaries through its capacity to aggregate and desegregate data by target group. The increased awareness and utilization of such data by national, non-governmental and private health care researchers and providers will contribute substantially to the PHP's general goal of upgrading the quality of antenatal and postpartum services in the West Bank and Gaza.

As part of the fourth-month pre-implementation phase of the PHP, HDIP has conducted an assessment of the existing management information systems that the PHP Partner NGOs are currently using. HDIP has also investigated, through field visits and consultations, the development of the MIS within the MOH and the MIS system currently under use by UNRWA. Consultation has also taken place with executive staff of UNFPA in an effort toward cooperation and collaboration with their institution and with the country's leading health service providers and health research organizations.

The following is a comprehensive report on the findings of the assessment, including a statement regarding each institution's MIS needs and potential capacity.

METHODOLOGY

In order to effectively manage and organize the information gathered through the field investigations implemented by HDIP's MIS team, the following procedures were implemented:

I. Overview of Forms

Prior to visiting MOH, UNRWA and partner NGO clinics, the HDIP MIS team obtained copies of all forms utilized by the clinics including client records, daily logs, monthly reports, and maternal and reproductive health charts and reports. The reporting system of each institution was then studied and recorded.

II. Field Visits

Field visits to clinics were scheduled with NGO staff, with the Ministry and with UNRWA prior to the MIS team's arrival so that clinic staff were prepared for our visit and free to consult with us. During the field visit, medical records, forms, reports and filing systems were examined. Extensive discussions were held with clinic staff regarding the utilization of forms and reporting procedures.

III. Review

Immediately following the field visit, each member of the MIS team completed a field visit form. The form was designed to remind investigators of the key indicators we plan to design into the MIS system, and has spaces provided for observations, notes and comments (see attachment A). The details on the forms were then combined into a field report.

IV. Report

After the investigation of each clinic, a comprehensive report was written with the specific details of the information system of that institution.

ASSESSMENT FINDINGS

PALESTINIAN NATIONAL AUTHORITY, MINISTRY OF HEALTH

MOH Women and Child Health Data Recording System Index[1]

A. Pregnancy Care Record
   1. Preliminary assessment of pregnancy factors
   2. Pregnancy risk assessment/referral form
   3. Present pregnancy follow-up
   4. Completion of pregnancy
   5. Postpartum assessment

B. Hospital Delivery report

C. Hospital medical evaluation forms
   1. Parity one or more
   2. No previous pregnancies
   3. Miscarriage/abortion

D. Infant Health record/growth chart

E. Family Planning Services record

F. Home Visit record

G. Daily Logs
   1. Maternal/infant visits (>1 yr. and < 1 yr., with serial logs)
   2. Family planning services (and serial log)
   3. Pregnancies
   4. High risk pregnancies

H. Monthly Reports
   1. Center activities
   2. Family planning report
   3. Maternal/infant services
   4. Vaccination report
   5. Vaccination report for refugees/non-Palestinians
   6. Contraception inventory

CLIENT RECORDS

Pregnancy Care Record

- Demographic information
- Social information/accommodations
- Medical factors
- History of previous pregnancies

[1] All forms and records listed in data recording system indexes are those that relate to women, infant or reproductive health. The listed forms and records have been titled in indexes as each institution names them.

- Present pregnancy information
- Pregnancy risk assessment
  - social/personal factors
  - medical factors
  - history of previous pregnancies
  - present pregnancy
  - summary
- Family tree-health status
- Preliminary assessment of pregnancy factors (results from risk-assessment)
- Present pregnancy follow-up
  - nurses examination
  - medical examination
- Post delivery
  - mother/infant health status
- Postpartum assessment

Hospital Delivery Report

- Antenatal number/name address
- Previous medical history
- Previous obstetrical history
- Present medical history
- History of present pregnancy
- Prenatal health exam

Infant Health Record

- Personal identification
- Social/personal factors
- Pregnancy/birth data
- Child weight/growth charts
- Immunizations
- Lab tests
- Intercurrent illnesses
- Nutrition
- Development
- Medical examinations
- Follow-up notes

Family Planning Record

- Demographic information
- Reason for family planning
- Family planning period
- History of contraceptive use
- Reproductive history
- Medical history
- General examination

- Lab tests
- Follow-up visit

Hospital Medical Evaluation Forms

- *No Previous pregnancies*
  - demographic information
  - delivery information
  - blood tests
  - family planning questions
  - information on breast feeding
  - general information
- *Parity one or more*
  - Demographic information
  - Previous delivery information
  - Current delivery information
  - Post delivery lab tests
  - Infant feeding data
  - Family planning information
  - Disabled children
- *Miscarriage/abortion*
  - demographic information
  - blood test
  - status/reason for miscarriage or abortion
  - family planning information
  - history of disabilities in family

Comments On Client Records

Filing System

Pregnancy care records, family planning forms, and infant health records are all filed separately with separate indexes and serial numbers. This system leads to the duplication of recorded data.

Records

- One Pregnancy Care record is filled for each pregnancy. The record is kept for one year and then transferred to storage.

- The pregnancy risk assessment form is very well designed and easy to use.

- The infant health record is kept for children 0-3 years of age. There was some data duplication within this form and the Pregnancy care record.

- The same family planning record is used for the duration of the woman's reproductive life. We found data duplication especially in the area of demographics,

reproductive health history and previous deliveries within this record and the pregnancy care record. It was also noted that this record is not updated regularly.

- The MOH clinics keep their maternal and child health and family planning services and records separate. There is no correlation between family planning records and other health records.

- The hospital medical evaluation forms are filled at the hospital and sent to the MOH for data entry. The problem with all three of these forms is that they are not linked in any way to the prenatal care or health records of the women. There is no serial or ID number on the forms to link them with the woman's clinic file.

- We also noted that the MOH does not have a special form for gynecological examinations. Gynecological examinations are recorded on the patient's general clinic record.

Daily and Monthly Reporting System

Daily Logs

Maternal and Infant Daily Report

- No. of cases per day
  - 1st maternal (clinic)visit
  - 1st baby (clinic)visit (under 1 year) (with serial log)
  - vaccinations
  - follow-up visit
  - visits by babies over 1 year (with serial log)

Pregnancy Log

- serial no., name, age, date of registration, address, refugee status
- pregnancy month at first visit
- general health
- blood test (date and result)
- No. of previous pregnancies
- No. of previous abortions or miscarriages
- expected date of delivery
- notes

High Risk Pregnancy Logs (same as above with separate index and serial number)

Family Planning Services

- Serial no., name, age, family file no.
- visit type (first visit, follow-up)
- services: IUD insertion, IUD removal, Pills, condoms
- cytology test, suppository
- counseling, follow-up

- amount paid
- total payments per day

Contraceptive Daily Log
- Daily distribution of contraception
  - contraceptive type
  - quantity
  - unit price
  - total sold of each type
  - total for each day

Monthly Reports

Center Activities
- Last recorded family serial number
- No. of maternal follow-up visits
- No. of high-risk pregnancy referrals
- No. of Dr. visits
- No. of home visits
- No. of first clinic visits, follow-up visits, Dr. investigations
- Total no. of children under normal weight/height
- Prenatal care visits
- Postnatal care visits
- Pregnancy tests
- Immunizations

Maternal and Infant Monthly Report
(Detailed per day)
- No. of infant (under one year) visits (1^{st} visit, follow-up visit)
- No. of child visits (over one year) (1^{st} visit, follow-up)
- No. of maternal visits (not high-risk pregnancies)

Family Planning Services Monthly Report
- Service type and contraceptive distribution per ages <20, 20-30, >30
- No. of services, no. of cases, new cases, return cases per age group
- Total distribution

Monthly Vaccination Report
- Vaccine type
- Number of infants who received their first, second, third and fourth dosages and the percentage out of those infants scheduled for their dosages that came to clinic and received the vaccination.
- Total vaccinations

<u>Comments on Daily and Monthly Reporting System</u>

As is the case with the NGO clinics, MOH monthly reports are designed to count services rendered not patient cases. For this reason, it would be difficult to obtain the PHP indicators, although all the necessary data is gathered and recorded in a consistent and reliable manner. Further, because of the fact that there is no correlation between family planning services and other health services, it would be difficult to draw any analysis relating to family planning and other postnatal care services except by going through client records relating to both services and matching records through patient names.

Currently, the MOH gathers data on a monthly basis from their clinics. Most of this information is entered into a spreadsheet program for data analysis and some indicators are transferred to SPSS for analysis. Antenatal, postnatal and family planning data is gathered through the Hospital Medical Evaluation forms and entered into Microsoft Access software for storage. After aggregation, this data is sent to the Women's Health and Development Directorate (WHDD). Feedback to clinics takes place every six months and sometimes annually.

MOH personnel informed us that the system is also designed to aggregate data from NGO clinics, but few clinics are submitting their data in a timely fashion to the Ministry.

UNDER DEVELOPMENT

According to the Ministry of Health's National Strategic Health Plan (1999-2003), the present health MIS is "inadequate and still lacks standardized operations at both regional and national levels". The Ministry, in cooperation with the World Bank, has recently begun a feasibility study concerning communication links and will soon be piloting its implementation. The next step is to develop a health management information system to be connected to the National Information System linking all Palestinian Ministries. This system is intended to collect, tabulate and store information on demography and health status indicators.

Also under development at the Women's Health and Development Directorate (WHDD), is a national database for women's health. Currently, the only information that

is stored on a computerized database is that which is gathered through the Hospital medical evaluation forms.

UN RELIEF AND WORKS AGENCY (UNRWA)

Women and Child Health Data Recording System Index

A. Maternal Health Record
B. Family Planning Record
C. Antenatal and Postnatal Records
D. Home visit Record for Pregnant women
E. Child Health Record (age 0-3 years)
F. Mother and Child Immunization card
G. Daily Logs

1. Maternal Health care
2. Infant and Child Health Care

Client Records

***Maternal health record*:**

- General information
  - Country and clinic name
  - Women's ration card number and record serial number
- Demographic information
  - Obstetric history (including any past pregnancy complications)
  - Subsequent obstetric history
  - General medical history (including ante-natal and family planning)
- Medical care received
  - Medical examination
  - Laboratory tests
  - Diagnosis
  - Management
  - Medications

Antenatal record:

- Pregnancy general information
- Medical examination
- Obstetric examination
- Risk assessment
  - Factors related to past history
  - Factors related to present pregnancy
- Medical officer's appraisal at first visit
- Follow up
- Referral

- Home-visits activities to the women

Post-natal record:

- Summary of pregnancy
- Outcome of pregnancy
- Place of delivery
- Mother's health status after delivery
- Infant's
  - Medical examination
  - Immunization received

Family Planning Record:

- Demographic information
- Previous use of family planning methods
  - Method used
  - When and duration
  - Source of method
  - Reason for discontinuation
- Method selected on first visit
  - Combined pills
  - Mini pills
  - IUD
  - Condoms
  - Pessaries
  - Others
- General medical appraisal
  - Cervical exam
  - PV exam
  - Breast exam
  - HB result
  - Breast feeding
  - Weight
  - BP
  - Date of last menstruation period
- Medical review
- Change or discontinuation of method
  - Method used
  - Duration of use
  - Reasons for change or discontinuation
  - New method selected
- Follow up

Home Visit Record for Pregnant Women

This record includes all the information about the pregnancy that should be presented to the health professional at time of delivery, so it kept with the mother to be presented at place of delivery.

Mother and child immunization card

- Immunization information
- Mother (DPT-TT)
- Child immunizations offered by UNRWA

***Child health record (Boys and Girls*)**: Follow up until 3 years of age

- Demographic information
- Information about the delivery
- Mother's pregnancies history
- Immunization information
- Growth chart
- First medical examination
    - Family diseases
    - Main complaint
    - Physical Examination
    - Laboratory investigation
    - Diagnosis
    - Management
- Follow up
- Nurses notes

Daily Logs

Maternal health Care

- Pre-natal care
- Deliveries
- Outcome of pregnancy and delivery
- Post-natal care
- Family planning services

Infant and child health Care

- Number of children
    - Age 0-<1 year
    - Age 1-<2 years
    - Age 2-<3 years
- Immunizations

<u>Comments on Client Records</u>

Filing System

When mothers come to the clinic for antenatal service for the first time, a maternal health record is created (given serial number) and then an antenatal record, which covers the present pregnancy, is attached to it. After delivery, postnatal and family planning records are attached and given a sub-number of the maternal health record serial

number.

A Child health record is opened once the child comes for a well baby clinic check-up or for immunization. Child records are kept separately from mother's records.

Women's health record (ante-natal, post-natal and family planning) are all kept in one file in order to make it easier for follow up, and in order to gauge any interruption in her utilization of services. Home visits are also conducted for these women. Advice is given to women at 8th month of pregnancy to return for post-natal service and for family planning services. These records are standardized and used in all UNRWA clinics within all refugee localities.

Data is recorded manually at the clinic level and integrated into a monthly report that reflects general services offered. This data is then entered into a computerized database at UNRWA headquarters in Jerusalem. District reports as well as regional reports are prepared for managerial purposes and also used for UNRWA's annual report on Palestinian refugees in all countries**.**

UNION OF PALESTINIAN MEDICAL RELIEF COMMITTEES (UPMRC)

UPMRC Women and Infant Health Data Recording System Index

A. Family Information Sheet
B. Maternal Health Card (includes antenatal record)
C. Prenatal Record, newborn record
D. Gynecological record
E. Cytological request form – Pap Smear
F. First medical check up
G. Medical records
H. Child medical record/growth chart
I. Monthly Reporting System
    1. Morbidity Report
    2. Monthly Clinic report
        a. Health services utilization
            1) General clinic
            2) Women Health
            3) Midwifery
            4) Child Health
            5) Specialized services
            6) Others
        b. Referrals

c. Catchment Area
d. Home visits
e. Community Activities
f. Financial report

3. Disease Report (ICD-10 by age group)

J. Monthly income/expense form
K. Antenatal/Postpartum care home visit form
L. Mobile health clinic form
M. Diabetes/heart home visit form

Client Records

Child Medical Record (0-3 years, male and female)

- birth history
- first medical check up
- child's feeding
- vaccinations
- lab tests
- child development
- past medical history
- physical examination
- diagnosis and treatment
- growth chart

Gynecological Record

- demographic information
- obstetrical history
- menstrual history
- past medical history
- contraception and family history
- general examination
- physical examination
- pelvic examination
- lab and pap smear results
- list of diagnoses and treatments to date

Prenatal Record

- demographic information
- obstetric information
- history of contraceptive use
- past medical history
- family medical history
- immunizations
- pap smear results
- general examinations
- physical examinations

- pelvic examinations
- fetal information chart
- labor summary
- postnatal examination

Prenatal and Postnatal Care Home Visit Forms

Prenatal check-up

- time, place and duration of visit
- demographic information
- prenatal care counseling
- obstetric history
- condition of pregnancy
- health exam

Postnatal Care

- birth date, place, type of delivery, repercussions associated with delivery
- mother's health exam
- baby's health exam
- health education during visit (breast feeding, family planning, feeding, hygiene)
- other activities during visit
- visit evaluation

Maternal Health Card

- demographic information
- relevant family history (high B/P, twins, hereditary diseases, diabetes, consanguinity)
- health history
- postnatal examination
- complications of labor with relevant family history, maternal immunization history)
- comprehensive chart for pregnancy, labor, delivery and infant health status
- antenatal record (blood tests, physical examinations, high risk assessment, ultrasound findings, previous obstetric history, menstrual history, health exam chart)

Comments on Client Records

Filing System

Client records at UPMRC clinics are filed, coded with serial numbers and indexed by family. The first page of each family file contains a family information sheet, which documents demographic information about the family and their accommodations, and also lists the name of each family member. The medical records of each family member are sub-coded and kept within the family file. When a woman within the family becomes pregnant, her prenatal record is removed from the family file and filed separately by

expected month of delivery. After the delivery of the baby, the record is returned to the family file.

Upon investigation of clinic files, it was found that many client records were left incomplete. Also, as shown in the lists above, there is much duplication in the information recorded (the same information regarding any one client is recorded several times on more than one form). Other specific problems found include:

- The Family Information Sheet was not updated to add changes in family structure or in household accommodations;
- Home Visit forms are filed separately (not with any other maternal records) and are not classified as community education activity;
- Family planning counseling that takes place during home visits is not recorded as a community education activity;
- The Maternal Health card, which is kept by the client to take with her to the hospital during delivery, does not hold sufficient information regarding high-risk pregnancy assessments (as compared to the MOH assessment for example). Additional criteria may need to be added upon agreement and approval by the expert group.

Daily and Monthly Reports

Women and Infant Services Daily Report

- Name of patient, file no., place of residence, age
- Type of visit (gynecologic, antenatal, postpartum, family planning)
- First visit, new case or follow-up
- Diagnosis, treatment
- Lab tests
- IUD insertion/removal
- Pap smear, breast test, ultrasound
- Fees
- Other tests, notes

Monthly Reports

Women and Infant Services

- Service name: (women's health, gynecological, antenatal care, postnatal care, family planning, pap smears, midwifery (antenatal, postnatal, family planning, pap smear)
- Service Provision for Each Clinic
  - Clinic working days (1)
  - No. of first visits (2)
  - No. of new cases (3)
  - No. of follow-up visits (4)
  - Total no. of services (3+4)
  - Average of services per day (3+4/1)

- Total services for UPMRC Clinics:
  - working days
  - first visits
  - new cases
  - follow-up visits
  - total all services
  - average of daily services
- Home Visits
  - No. of urgent visits
  - No. of follow-up visits
  - No. of health education visits
  - Total of all visits
  - Total of all beneficiaries

Comments on Daily and Monthly Reporting System

Note that while family planning services are counted daily and monthly, there is no special family planning form which can report information on individual clients with their history of contraceptive use, counseling they have received, contraception distribution, their reproductive health history etc.

While the daily report does record the patients' names and the antenatal and postpartum services provided to them, the monthly reports are service based, not client based. In fact, there is no one comprehensive record of the history of services provided to any individual client.

Indicators

UPMRC does record all of the data needed to obtain the indicators required for the PHP, however a system must be devised in order to facilitate this process. The computerization of the clinics would allow the easy retrieval of such information. As of now, the number of women who return to the clinic to receive postpartum care out of those who received antenatal care can only be determined by searching through individual client records. Clearly, without this initial indicator, the two additional indicators required by the PHP would be very difficult to attain.

In addition, we found it important to note that UPMRC cannot easily count the total number of women under their care who are pregnant within any determined period of time. They do record the number of pregnant women who make their initial visit to the clinic, and their expected delivery date but this cannot account for the nine-month

gestation period. According to interviews with UPMRC health workers, there is a discrepancy in the classification of postnatal care visits, family planning visits, and visits not related to pregnancy. This has lead to inaccurate monthly reporting of services provided.

UPMRC collects a very large amount of data regarding their services, however only part of this data is entered into a computerized database at UPMRC headquarters. The information that is computerized is primarily used for managerial purposes. Health workers at UPMRC stated that a computerized system at the clinic level would greatly assist in the collection, aggregation and monitoring of data. Monthly reports are currently filled by hand by health workers and can take up to 2 working days time to complete (health workers report having to take the work home to complete it on time).

The MIS team met with Dr. Khadija Jarar, UPMRC women's health manager. She informed us that UPMRC would be utilizing a new morbidity sheet designed especially for maternal and post-reproductive age morbidity. They will also be using a new family planning form that has been designed in collaboration with the Ministry of Health. The form is currently being printed and as of yet, we have not had the opportunity to see it.

Data Flow and Feedback

Data at the clinic level is collected manually, aggregated within monthly reports and sent to UPMRC headquarters. Data is then entered into computerized databases and selected indicators are returned to clinic staff. This information is primarily used for managerial purposes. Every three months, every six months, and once annually, UPMRC compiles a management report and a performance "grade" for all its clinics.

PATIENT FRIEND'S SOCIETY (PFS)

PFS Women and Infant Health Data Recording System Index

A. Present pregnancy card
B. General clinic form (used for gynecological visits)
C. Postnatal Records
    1. Infant health record
    2. Maternal & Child health record
    3. Obstetric history record
    4. Nine-Month Development chart

D. Child health record (well-baby clinic)
E. Family planning/Reproductive health chart
F. Birth control cards
G. Daily logs
    1. Patient care record of symptoms and treatment
    2. Family Planning Log
    3. Daily maternal, infant and reproductive health services
    4. Health Worker Activity report
H. Monthly reports
    1. Maternity and Child Health Program
    2. Family Planning Report
        a. Inventory
        b. Cases (new cases, follow-up, return cases)
        c. Family planning services (IUD insertion/removal, counseling)
    3. Disease report
    4. Health worker activities
    5. Transportation report

Client Records

Present pregnancy card

- Demographic information
- Physical examination information
- Vaccination information
- Present pregnancy information (each clinic visit per pregnancy)

General Clinic Form

- Name of patient, age, gender, social status, date, notes
- List of follow-up notes (date, previous visits, diagnoses, treatment, signature of attending physician/nurse)

Postnatal Records

- Infant health record
    - Name, gestation, type of delivery, birth weight, place, apgar.
    - Physical exam during home visit
    - Follow-up visits
    - Consultation/treatment card
- Maternal and Child Health record
    - Demographic information
    - Accommodation information
    - Maternal health exam (postpartum)
    - Follow-up
- Obstetric History

- Maternal blood type and immunization history
- Complication of pregnancy
- Birth history

▪ Nine- month development assessment

- Child growth
- Development (large motor skills, fine motor skills)
- Vision
- Hearing
- Social
- Physical exam
- Questions for parent
- Actions taken

Child Health Record (well-baby clinic)

- Child health and feeding
- Vaccination history
- Growth chart

Family Planning/Reproductive Health Chart

- Demographic information
- Reason for using contraceptives
- Reproductive health history
- Menstrual history
- Previous contraceptive Use
- Medical history
- General health examination
- Follow-up sheet

Birth Control Cards

- Pills
- Condoms
- IUDs
- Each with visit chart and instructions for use

Comments on Client Records

Filing System

When mothers come to the clinic with their children for postpartum care, a child-based file is created. The file contains all the postnatal care forms listed above. The files are coded with serial numbers and indexed. If the mother does not come to the clinic for postpartum care soon after she delivers, CHWs conduct a home visit, fill out the postnatal care forms and file them at the clinic. The Family Planning/Reproductive Health Chart is

filed separately from the postnatal care forms and the Present Pregnancy card is kept with the woman to take with her to the hospital upon delivery.

Records

- The General clinic form is used when women who are not pregnant come to the clinic for gynecological care, and/or when a child with no medical file at the clinic comes for medical care. This form is kept with the patient (it is not filed at the clinic). The data recorded on this form is lacking and provides no space for recording any type of medical history of the patient.

- There is no form specifically designed for gynecological care.

- We found the postnatal records to be very well designed and to hold comprehensive information regarding the health and development of both the mother and the infant.

- The Child Health record is used during well-baby clinic visits.

- We found the Family Planning/Reproductive health chart (which was designed in collaboration with various institutions) to be well designed and to hold comprehensive information regarding the client's reproductive health. The form is designed to cover health care for the entire span of the woman's reproductive age, although we found that they are not updated consistently.

Daily and Monthly Reporting System

Daily Logs

Patient Care Record of Symptoms and Treatment
(Used for general clinic and for maternal and infant health)

- Divided by day
- Serial no., name, age, address
- Previous medical history
- Diagnosis
- Treatment
- Signature of attending nurse/physician

Family Planning Daily Log

- Name, date
- Contraceptive type
- Family planning service (new case or follow-up)

Health Worker Activities

- CHW name
- Activity date, region, place, subject, time
- No. of beneficiaries

- Questions for CHW, (Problems in preparing for activity, Audio/Visual materials used)

Clinic Services Daily Log

- Prenatal care visits
- High risk pregnancy cases
- New born babies
- Lectures
- Accidents
- Referrals
- Health worker activities
- At-risk children
- First pediatric visits
- Well-baby clinic visits
- Family planning visits
- Home visits
- Blood pressure tested

Monthly Reports

Maternal and Child Health Program

Contains the total number of visits for:

- Pregnant women
- At-risk pregnancies
- New births
- Home visits
- Family Planning
- Well-baby clinic
- Pediatric cases
- At-risk children
- Lectures/attendance
- Monthly training
- No. of referrals
- No. of accidents
- Notes
- totals

Family Planning Service Report

- Quantity and type of birth control distributed per month (inventory including income, outcome, balance and clinic revenue)
- Family Planning beneficiaries report (contraceptive method, follow-up visits, new cases, and return cases)
- Family planning services (no. of services, no. of beneficiaries)

Monthly Disease Report

- Includes: Measles, diarrhea, malnutrition, respiratory illnesses, meninges, ulcers, skin diseases, gynecological health, first aid, heart disease, dehydration.
- Divided by number of cases with age groups 0-5, 6-15 and 15 and up.

Monthly Health Worker Activity Report

- Month and year
- CHW name
- List of activities (date, site name, visit aim, no. of beneficiaries, notes)

Comments on Daily and Monthly Reporting System

The Patient Care Record of Treatment and Symptoms is used to register information from all clients including pregnant women and those seeking postnatal care (except family planning, which has a separate log). During antenatal care visits, the pregnancy month, blood pressure, blood test results, height of the fundus, weight and fetal status are all registered in the diagnosis section of the Patient Care record.

Due to the lack of unification of client records, we found some data duplication. Demographic information for example, was recorded in several different forms.

Indicators

PFS clinics do record information regarding prenatal and postpartum care, including family planning, however, daily and monthly reports are service based, not patient based. It is therefore very difficult to track the services provided to anyone client, as is the problem with the UPMRC information system. The data necessary for the indicators required by the PHP is gathered by PFS clinics as evidenced by the above description of their recording system. The process of obtaining these indicators, however, would be very time consuming and would require the manual retrieval of client information from several sources.

Data Flow and Feedback

Every month, PFS clinics fill out and send the above listed Maternity and Child Health monthly report. PFS headquarters then tabulate the data gathered from all their clinics and record them all on one Maternity and Child Health report, showing the results of each clinic. The results are sent back to all clinics once monthly. PFS staff informed us, however, that this is not done as regularly as it should, and that the clinic staff is not given any type of analysis of the data, just the figures for all PFS clinics.

Consultation with
UNITED NATIONS FUND FOR POPULATION ACTIVITIES (UNFPA)

HDIP staff met with Dr. Mohammed Abdel Ahad and Ms. Leila Bakr of UNFPA on October 5th to brief them about the PHP project and to consult with them specifically about the MIS segment of the project.

We informed them of the assessment we were conducting and told them that we will be working on the development of a new standardized health information system with which we would need their input and cooperation. HDIP intends to invite UNFPA to take part in the expert group meeting, which is to be held prior to the final design of the new system.

We were also briefed on the projects UNFPA is currently implementing. They informed us that they are developing, in cooperation with the MOH, a database, which would store information about all the major reproductive health projects being conducted in the country.

UNFPA has also recently begun to discuss the development of a MIS with the World Bank, and are also establishing a Forum of health care providers and health research organizations, in an effort to promote linkages and reduce overlap between NGO and governmental service provision. In mid October, UNFPA will have completed the publication of Protocols and Guidelines for Women's Health, which they developed with the MOH and UPMRC.

Clearly, HDIP and PHP partners should remain in close contact with UNFPA if indeed they are to develop a MIS. Further, CDPHC may benefit from investigating the Protocols and Guidelines to make sure that they do not duplicate efforts in the Standards of Care training manual that they are to develop as part of the PHP.

SUMMARY of FINDINGS

PHP partners are collecting large amounts of data through the information systems currently in place, especially in the areas of maternal, child and reproductive health. However, much could be done to improve the accuracy and efficiency of data collection and reporting through the development of a well structured and well managed computerized health information system.

Areas of Weakness

The following summary reflects the major areas within PHP partner's health information systems that could be improved with the development of a new MIS system.

1) Data Aggregation and Analysis

Due to the lack of computerized databases at the clinic level, the aggregation of data for monthly reports is extremely time consuming and leaves great possibilities for error, (health workers report spending two to three days working- time on monthly reports). In addition, the manual retrieval of information from client records only allows for the aggregation of a limited amount of variables. Due to the inefficiencies of a manual information system, much of the valuable information gathered at the clinic level is not aggregated for analysis.

2) Indicators and Trend Analysis

The information systems currently in use allow for the retrieval of only a very limited number of indicators. Indicators of outcome variables are usually analyzed for managerial purposes or for particular time-limited studies. Due to this lack of indicators, the potential for trend analyses is limited.

3) Data Flow

The PHP clinics are in need of improvement in data flow procedures. A system must be implemented that structures and standardizes the flow of data beginning from the client's visit to the clinic and ending ultimately with trend analysis.

4) Reporting and Monitoring

PHP partner institutions collect large amounts of pertinent and potentially useful data, however monthly and annual reports reflect only a small portion of that data. The analysis or monitoring of any one segment of the population is not easily conducted due to the way the data is organized within the presently used reporting systems.

5) Data Duplication

One of the major problems found within the clinic client records is the fact that the same information regarding any individual client is recorded more than one time in sometimes, several different records. This is especially true in the recording of demographic information.

6) Missing Data

Although not frequently found, some spaces on client records were left empty, especially in the areas of socio-economics or demographics. This may be due to the fact that the same information had been recorded on another record and CHWs did not wish to repeat the information.

7) Classification, Case Definitions and Training

It has become clear through the conduct of the pre-assessment that there is a discrepancy in the classification of postnatal care services. In specific cases, monthly reports do not accurately reflect the number of postnatal care services rendered because 1) home visits during which women receive postnatal care are classified separately from the total of postnatal services and 2) family planning services are not classified as a postnatal service and 3) the case definition of postnatal care is not clear among health workers (i.e. the time period after delivery during which the visit should be classified as postnatal). Further, not all institutions have or utilize a manual for the use of their information systems, and health workers in some clinics have reported that they do not receive training beside the initial instructions given for the use of forms.

8) Feedback

The information systems currently in place are not very well structured and most institutions are not monitored well. Feedback from the institutional centers back to service providers is minimal and used mostly for managerial purposes rather than for the tracking of indicators relating to the health status of women and infants.

9) Standardization

The NGO and MOH information systems gather much of the same information at the clinic level, however client records and forms as well as aggregation and analysis procedures differ greatly among the various service providers.

10) Filing Systems

There is no standard filing system among PHP partners and not all of the clinics assessed keep all the records pertaining to women's health together in one file. The volume of records and files kept by clinics is substantial and is in need of reorganization so that information is readily retrievable for purposes of research, planning and monitoring.

11) Updating

There were several forms found within all the partner clinics with information that had not been updated, especially in the area of demographics. For example, once a family based file is created, the information regarding the head of household that was collected during the initial visit is not updated to add possible changes in occupation. Also, because the age of the client is not recorded as a date in some clinics, it is difficult to keep track of the age of the client without constant updating of the recorded age.

12) Community Data

All of the clinics that were assessed lacked recorded socio-economic and demographic information about the communities that they serve.

13) Lack of a Holistic MIS view

The overarching issue confronting PHP partner institutions is the lack of a holistic view of the structure, design and potential use of a health information system. The data

collected at the clinic level cannot be utilized to its full potential if there is no structured system with protocols and procedures for data flow, aggregation, analysis and feedback. For efficient, accurate and beneficial use of such a system all involved personnel must be trained in the overall structure of the MIS and be aware of its potential uses.

GENERAL GUIDELINES for the PROPOSED MIS UPGRADE

The most efficient way to solve the inefficiencies and inaccuracies of the existing information systems is through the development of a unified, standardized MIS. The scope of the proposed MIS will cover data gathered at the clinic level pertaining to antenatal, postnatal, gynecological and reproductive health, including family planning. To gain immediate and significant change in the efficiency of existing systems and in order to accurately monitor the indicators relating to the PHP, a computerized system must be developed and data should be filled at the clinic level. The data will then be electronically or physically (via diskettes) sent to each NGO center, and to HDIP, which will serve as the main database center. HDIP will monitor the data, retrieve and analyze specified indicators, and provide trend analysis and feedback.[2]

Strengths and Potential Capacities

It was found as a result of the MIS assessment that PHP partner clinics do have the potential to effectively manage a computerized MIS. The following reflects some of the major points of strength found as a result of the assessment.

- ***Maternal and Child Health as a Priority***
  PHP partner NGOs and the Ministry of Health have clearly placed the issue of maternal and child health as a priority both within their service provision and in the retrieval of data relating to antenatal, postnatal and reproductive health.

- ***Comprehensive Data Collection***
  The health records within the PHP partner clinics all include information that can lead to the retrieval of the indicators required for the PHP project, as well as other important health indicators.

[2] The proposed system is to be designed by HDIP in collaboration with PHP partners and with the assistance of consultants specialized in the design, programming and installation of health information systems.

? ***Presence of Required Infrastructure***

The infrastructure of most PHP partner clinics will allow for the installation of a computerized information system (i.e. they are equipped with telephone and electricity services). The few clinics that lack these services can be easily upgraded.

? ***Personnel***

The personnel with whom the MIS team met were extremely cooperative and informative and clearly have the potential and capacity to efficiently run an upgraded information system.

? ***Experience in Development of Forms***

PHP partners do have experience in working on the development of forms through previous projects conducted in cooperation with their centers and various funding agencies.

? ***Enthusiasm toward Improvement and Development of Existing Systems***

The administrations of PHP partner institutions as well as service provision staff have expressed their enthusiasm and need for an improved MIS among their clinics, and especially towards a unified computerized MIS.

Objectives of the Proposed MIS

The following are the objectives of the proposed health information system:

1) To provide a sustainable upgrade to existing information systems.

2) To serve as a model which can be adopted and developed to serve as a national information system in the future.

3) To unify and standardize client records and forms among PHP partner clinics.

4) To assure the proper recording and storage of data at the clinic level.

5) To provide easy accessibility to data.

6) To improve validity of data for planning, research and human resource development.

7) To measure those indicators necessary for the PHP as well as other service indicators, which would assist in the monitoring of the health status of women and infants in the communities served.

8) For management purposes at
    a) the clinic level (for self- monitoring of service provision and health status of the communities served);

b) the NGO administrative level; (to monitor service provision and health status of communities served)
c) the MIS database center (for overall management of the system, for trend analysis and feedback).

Expected Outcomes

The newly developed MIS will result in the following improvements in the existing information systems among PHP partners:

1) Sustainability

The proposed MIS will allow for a sustainable upgrade in the existing information systems. Rather than burdening clinic health workers with more forms to be filled, the new system will standardize, unify and computerize records and forms. Furthermore, the system will be designed such that scale-up will be easily implemented.

2) Increase in Trend Analysis and Monitoring

The computerized MIS will increase the accuracy of data collection as well as the amounts of data stored. The functions of the computerized system will allow for the retrieval of this data by target population and by other indicators, which will increase analysis and monitoring of service provision and the heath status of women and infants. Trend analysis of designated indicators will be continuously conducted by HDIP, as it will function as the main database center.

3) Increase in Accuracy

A computerized system will improve the overall accuracy of data collection. Manuals are to be developed for Fields entry and procedures. Health workers and NGO administrative staff are to be given manuals and are to receive training as well as on-going supervision. These measures will significantly reduce the inaccuracies found within the present systems by clarifying case definitions and classifications and by unifying and solidifying procedures.

4) Retrieval of Specified Indicators

The system will be based on client records rather than service provision and will therefore lead to the easy retrieval of those indicators required for the PHP as well as other important health status indicators to be agreed upon by the Expert Group. Computerizing the system will allow for the automatic retrieval of these indicators.

5) Reduction of Costs

The printing of paper forms and records is extremely costly. The proposed MIS will greatly reduce the amount of forms and records to be printed as client records will be unified and computerized.

6) Elimination of Filing Problems

The computerized system will reduce the amount of space needed for filing of records and forms and will assure that all information regarding any one patient is stored in one place.

7) Elimination of Data Duplication

The computerized records will be designed such that data will not be entered into more than one field. This will also lead to a decrease in the amount of missing data.

8) Decrease in Time and Effort

The manual procedures for retrieval and transfer of data from client records to daily and monthly reports will be eliminated, greatly reducing the amount of time and effort required by health workers on reporting.

9) Recording of Community Data

The system will be designed to store demographic data, socio-economic indicators, and health status indicators of the surrounding communities which will allow the clinics to target particular health issues and enhance overall service provision.